Game Design I

2025-2026

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Course Description

Game Development Foundations leverages the excitement of creating games to teach students foundational computer science concepts, mathematics, and problem-solving skills. Through project-based learning, students will build 2D browser-based games using HTML, CSS, JavaScript, and the p5.js library.

Students will learn computational thinking, 2D graphic design, and game development principles while creating a unique coding project portfolio. The course uses custom JavaScript engines and the Pixilart editor to provide hands-on experience with real game development tools.

Learning Objectives

By the end of this course, students will be able to:

1. Understand and apply fundamental computer science concepts including variables, loops, conditionals, and functions
2. Create interactive 2D games using JavaScript and the p5.js library
3. Design and implement game mechanics, narratives, and user interfaces
4. Apply computational thinking and problem-solving strategies to game development challenges
5. Create 2D graphics and sprites using the Pixilart editor
6. Debug code and troubleshoot programming errors
7. Build a portfolio of browser-based games demonstrating acquired skills

Resources and Software

- Web browser (Chrome, Firefox, or Safari)
- Mastery Coding LMS platform
- Pixilart editor (browser-based)
- Custom JavaScript game engines (provided)

Course Policies

Course Schedule

The daily agenda is in Schoology. Schedules are posted weekly and adjusted as needed for the class.

Methods of Assessment/Grading Policy:

FORMATIVE: Daily Work 10%
SUMMATIVE: Summative Assessments/Quizzes/Projects 90%

- **Summative assessments will make up the majority of the grade. 90% of grade**
    - Retakes/reassessments/revisions are not penalized by point deductions or averaging multiple attempts.
    - **Because they indicate mastery of standards, missing summative assessments will be marked zero, and parents will be contacted when zeros are put in the electronic gradebook.**
    - Students have up to one week to complete missing summative or revised assessments unless other arrangements are made with the teacher.
    - A summative assessment may be taken or completed one additional time.
        - **Test Corrections**
            - 75% of formative work must be completed to be eligible (3 of every 4 assignments)
            - Any student who scores below a 90% may be eligible to complete test corrections, except on Finals which are not eligible for revisions
            - 1st test taken or scheduled on or before initial exam date with the exception of sickness and/or emergencies
            - Student must consult with the teacher and schedule test corrections outside of class time.
            - If a student skips a class to avoid the summative assessment, they will not be eligible to complete test corrections at a later date.
- **Formative: Evidence of formative assessment needs to be present in the gradebook.10% of grade**
    - **Formative assignments that are not turned in will be marked missing and receive a 0 in the gradebook.**
    - Assignments shall be directly correlated to standards found on approved curriculum maps. (i.e. no ‘Syllabus’ for points)
    - Late formative work can not be penalized by point reduction and must be accepted up until the end of the unit.
    - Teachers shall establish reasonable time frames for the completion of formative retakes/revisions/reassessments during the unit of study. Some exceptions may apply in extenuating circumstances.